



iSwirl450

THE WORLD'S FIRST HYBRID SOLAR + WIND INDUSTRIAL ROOF VENTILATOR

Superior ventilation across
low, moderate and high wind conditions

INDUSTRIAL VENTILATOR



KEY BENEFITS



HYBRID SOLAR + WIND TECHNOLOGY

Two independent ventilation systems working together to deliver reliable ventilation across a broader range of operating conditions.



UP TO 34X GREATER EXTRACTION*

Provides up to 34x greater air extraction in low wind conditions and up to 2x higher airflow under tested nominal conditions, compared with the standard Ampelite SV450.



MORE VENTILATION WITH FEWER ROOF PENETRATIONS

iSwirl 450 enables comparable ventilation performance with approximately 50% fewer roof ventilators.



A TRUE HYBRID VENTILATOR

Solar-powered and wind-powered extraction operate independently to provide continuous ventilation whenever either energy source is available.



AUSTRALIAN DESIGNED & MANUFACTURED

Designed specifically for Australian conditions and manufactured in Australia using Ampelite's proven industrial roofing technology.



IDEAL FOR INDUSTRIAL APPLICATIONS

Warehouses Manufacturing Facilities Distribution Centres Agricultural Buildings Industrial Buildings.



*INDEPENDENT TESTING

Independent testing has verified significantly improved extraction and airflow performance across a range of operating conditions. See pages 2 and 3 for results.

Patent Registered:
2022348892 & PCT/AU2022/051492



SOLAR



WIND



SUPERIOR VENTILATION

iSwirl450

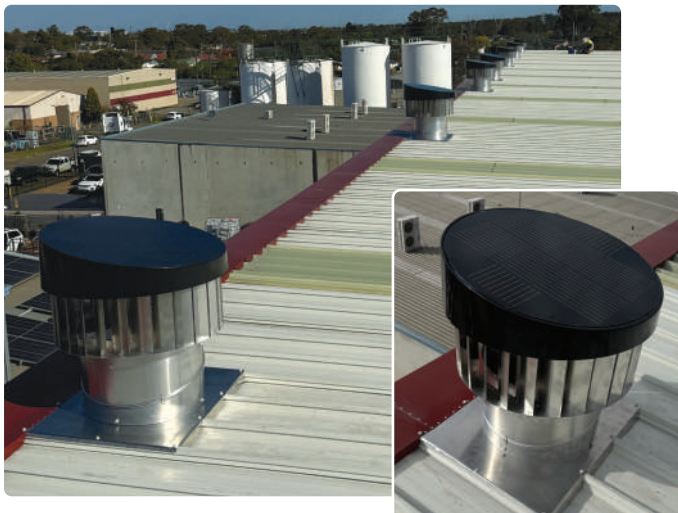
SOLAR POWERED INDUSTRIAL VENTILATOR

Ampelite has partnered with Australian innovator iSwirl Pty Ltd to bring the iSwirl 450 to market – a new generation industrial roof ventilator that combines proven wind-driven rotary ventilation with independent solar-powered mechanical extraction.

The result is a unique hybrid ventilation system designed to improve airflow performance, particularly during periods of low wind when conventional rotary ventilators are least effective.

The iSwirl 450 combines Ampelite's decades of manufacturing expertise with iSwirl's patented hybrid ventilation technology to deliver reliable, high-capacity roof ventilation without requiring grid power.

Suitable for warehouses, factories, manufacturing facilities and agricultural buildings, the iSwirl 450 provides a practical solution where improved ventilation and reduced heat build-up are important.



WHY LOW WIND MATTERS

Conventional rotary ventilators rely entirely on wind. During periods of very low wind, the iSwirl 450 can achieve up to **34x** greater extraction than the Standard SV450 through its hybrid solar and wind operation.*



SELF POWERED OPERATION

The iSwirl 450 operates without mains electricity by combining wind-driven ventilation with solar-powered mechanical extraction. Because no electrical connection is required, installation is simple and does not require an electrician.

With no electricity consumption, the unit delivers no running costs over the lifetime of the ventilator.

The World's First Hybrid Solar + Wind Industrial Roof ventilator

KEY BENEFITS



Hybrid Solar + Wind Technology

Two independent ventilation systems working together.



Enhanced Low Wind Performance

Designed to improve ventilation during periods of low natural airflow.



Up to 34x Greater Extraction*

Compared with the Standard SV450 in very low wind conditions.



Self Powered Operation

No connection to mains electricity required.



Australian Designed & Manufactured

Manufactured in Australia using proven industrial roofing technology.



Running Costs

No mains electricity connection or electricity consumption during operation.

INDEPENDENT ENGINEERING PERFORMANCE

Independent testing in accordance with AS 4740 demonstrated significant improvements in flow coefficient under full solar operating conditions compared with the standard SV450.

Performance Measure	Standard SV450	iSwirl 450 (Full Sun)
Flow Coefficient (Cf)	0.159	0.743

*Figures are typical results from NATA certified independent testing in accordance with AS 4740.

Independent testing was undertaken in accordance with AS 4740 – Natural Ventilators – Classification and Performance. Testing compared the iSwirl 450 with the Standard SV450 under identical laboratory conditions to quantify flow coefficient.



SOLAR

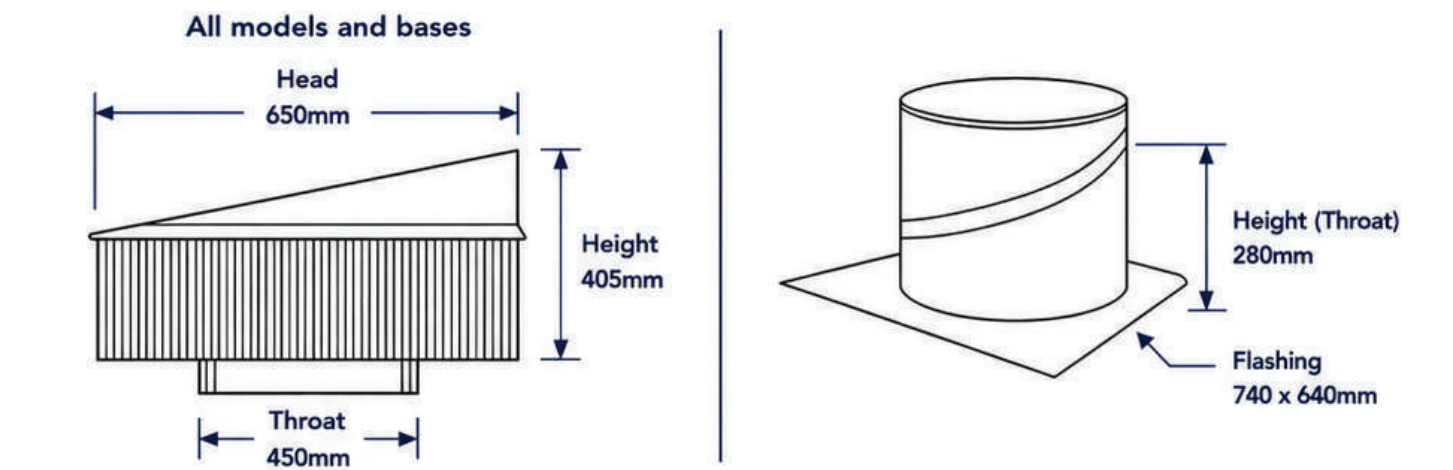


WIND



SUPERIOR VENTILATION

Dimensions



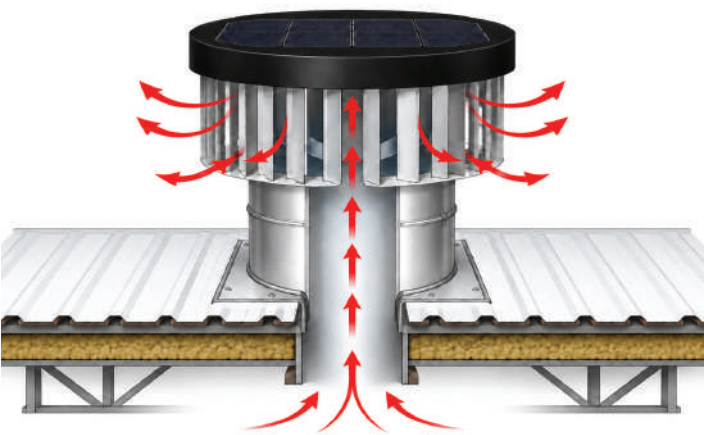
Head	Throat	Height	Flashing	Height (Throat)	Roof Pitch	Packaged Weight	Net Weight
650mm	450mm	405mm	740 × 640mm	280mm	1–30° max	18.5 kg	14.5kg

iSwirl 450 Independent Testing Demonstrated Up to 2× Higher Airflow

Compared with the Standard SV450 under full solar operating conditions.

Stack Height	Standard SV450 (Benchmark)	iSwirl 450 (Full Sun)
3m	396 m³/hr	788 m³/hr
6m	529 m³/hr	853 m³/hr
9m	637 m³/hr	907 m³/hr

Independent testing demonstrated up to 99% higher airflow (approximately 2× the airflow) at a 3 m stack height under normal operating conditions compared with the Standard SV450.



Designed for Real Operating Conditions

Unlike conventional roof ventilators that rely solely on wind, the iSwirl 450 operates using wind-driven rotary ventilation with independent solar-powered mechanical extraction.

The hybrid system is designed to enhance airflow during periods of low natural wind while continuing to harness wind energy whenever it is available.

This provides more reliable ventilation performance across a broader range of operating conditions without requiring mains electricity.

KEY ENGINEERING RESULTS

- ✓ Up to **34X** greater extraction in very low wind conditions*
- ✓ Up to **2×** higher airflow under normal operating conditions*
- ✓ Independently tested by NATA certified authority in accordance with AS 4740
- ✓ Compared against the Standard SV450 Hybrid Solar + Wind Technology

WHY THIS MATTERS



Improved airflow during periods of low natural wind can assist in reducing heat buildup, improving ventilation effectiveness and supporting occupant comfort in large industrial buildings.



Independent testing demonstrated that the iSwirl 450 can provide up to **34× greater extraction** in very low wind conditions compared with the Standard SV450.

HIGHER PERFORMANCE. FEWER ROOF PENETRATIONS.

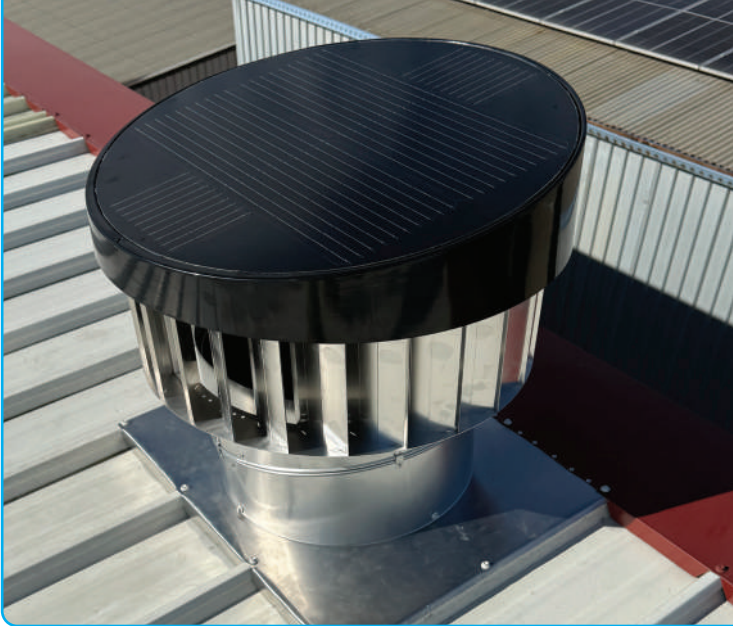
The iSwirl 450 has been engineered to deliver superior industrial roof ventilation with fewer roof penetrations.

Independent testing demonstrates that, under the nominated test conditions, the iSwirl 450 provides approximately double the extraction capacity of a Standard SV450, enabling comparable ventilation performance with approximately 50% fewer roof ventilators.

ILLUSTRATIVE INSTALLATION COMPARISON

Illustrative Comparison for a Typical 1,500 m² Industrial Facility

A 3m Effective Stack Height + 6°C Temperature Differential + 12 km/h Wind Speed



	Standard SV450	iSwirl 450
Installation Illustration		
Roof Ventilators	18	9
Extraction Capacity/Ventilator	396 m ³ /hr	788 m ³ /hr
Indicative Total Extraction Capacity	7,128 m ³ /hr	7,092 m ³ /hr

≈50% FEWER ROOF VENTILATORS

The example above illustrates how the iSwirl 450's higher extraction capacity can reduce the number of roof ventilators required to achieve a comparable level of ventilation under the nominated test conditions.

PERFORMANCE WHEN IT MATTERS MOST

Unlike conventional wind-driven roof ventilators, the patented iSwirl 450 Hybrid Solar + Wind Ventilator continues to deliver a high level of extraction during low and moderate wind conditions—when conventional wind-driven roof ventilators typically experience their greatest reduction in performance.

By harnessing both solar and wind energy, the iSwirl 450 helps maintain effective ventilation throughout the day rather than relying predominantly on higher wind speeds.

The result is more consistent ventilation performance and improved airflow when it is needed most.

WHY FEWER ROOF PENETRATIONS MATTER

Lower
installation
costs

Fewer roof
penetrations

Reduced
installation
time

Lower ongoing
maintenance

Cleaner roof
appearance

Greater design
flexibility

ENGINEERING NOTE:

The installation shown is illustrative only and demonstrates the relative reduction in roof ventilator numbers achievable using independently tested extraction capacities under the nominated test conditions. It is not intended as a project-specific ventilation design. Final ventilator quantities and layouts should always be determined for the specific building, application and ventilation objectives.

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